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Seismic source of 1966 Huacho Peru earthquake (Mw 8.1) from tsunami waveform inversion

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In this presentation, the distribution of the tsunami source is obtained for the Huacho earthquake of October 17 1966 at 21:41 UTC. It was a strong earthquake that shook the central region of Peru, causing 100 fatalities. The maximum intensity was reported in the cities of Supe (probably IX MM) and Huacho (VIII MM). A coseismic effect was a tsunami that inundated some coastal towns and resorts, such as Casma and Tortugas. The tsunami waveform recorded in the stations of Chimbote, Callao and Marcona were analyzed and processed to obtain the parameters of the tsunami source by an inversion process, in which the simulated tsunami waveform was compared with the observed waveform using the method of non-negative least squares. The maximum slip was 6 m located around the epicentre, the zone of greatest energy release was located offshore the city of Barranca, which is consistent with the maximum intensity values reported. The tsunamigenic scalar moment obtained was 2.05×10^{21} Nm, that is equivalent to a moment magnitude of Mw 8.1. We suggest that there is a high potential for the generation of a tsunamigenic earthquake in the central region of Peru, despite the occurrence of the 1966 Peruvian earthquake.

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